

WHAT IS CLAIMED IS:

1. A method of producing a ligand:receptor complex, comprising contacting:
5 a) a substantially pure or recombinant mammalian IL-B50 with a receptor comprising the IL-7R α or the R δ 2 subunit;
b) a mammalian IL-B50 with a receptor comprising a substantially pure or recombinant IL-7R α subunit; or
c) a mammalian IL-B50 with a receptor comprising a substantially pure or
10 recombinant R δ 2 subunit;
thereby allowing said complex to form.
2. The method of Claim 1, wherein.
a) said mammalian IL-B50 is primate IL-B50;
15 b) said complex formation results in signal transduction, STAT activation, or TARC, PARC or MDC expression;
c) said receptor is on a cell;
d) said receptor comprises both IL-7R α and R δ 2 subunit;
e) said complex formation results in a physiological change in the cell
20 expressing said receptor;
f) said contacting is in combination with a proliferative agent, cytokine, or chemokine; or
g) said contacting allows quantitative detection of said ligand.
- 25 3. The method of Claim 2, wherein said receptor is on a hematopoietic cell, including a lymphoid lineage cell, myeloid, or dendritic cell.
4. A method of modulating physiology or development of an IL-7R α or R δ 2
expressing cell comprising contacting said cell to an exogenous agonist or antagonist of
30 a mammalian IL-B50.

5. The method of Claim 4, wherein:

A) said antagonist is:

- 1) an antibody which neutralizes said mammalian IL-B50;
- 2) a mutein of said IL-B50; or
- 3) an antibody which binds to IL-7R α or R δ 2 or a complex comprising both;

B) said physiology is selected from:

- 1) proliferation;
- 2) lymphoid or dendritic lineage cell development;
- 3) antigen presentation; or
- 4) production of inflammatory mediators, including cytokines, chemokines, or adhesion molecules; or

C) said cell is a hematopoietic cell.

6. The method of Claim 4, wherein:

- a) said antagonist is an antibody and said physiology is hematopoietic cell proliferation;
- b) said agonist is IL-B50 and said physiology is hematopoietic cell differentiation; or
- c) said physiology is antigen presentation.

7. The method of Claim 4, wherein said modulating is blocking, and said physiology is lymphoid lineage cell proliferation.

8. A method of modulating a signal to a cell mediated by IL-B50 comprising contacting said cell to an administered agonist or antagonist of IL-B50.

9. The method of Claim 8, wherein said modulating is inhibiting, and said signal is a proliferation signal.

10. The method of Claim 9, wherein:

- a) said antagonist is a neutralizing antibody to IL-7R α or the R δ 2 subunit or a complex comprising said subunits;
- b) said agonist or antagonist is administered in combination with another antagonist or agonist of IL-B50; or
- c) said agonist or antagonist is administered in combination with a growth factor, cytokine, chemokine, or immune adjuvant.

11. The method of Claim 9, wherein said contacting is with another anti-proliferative agent or treatment.

12. A method of selectively labeling a population of cells, said method comprising contacting said cells with an antibody which binds:

- a) IL-7R α ;
- b) R δ 2; or
- c) a complex comprising one of said subunits;

thereby resulting in the identification of cells expressing said subunit or complex.

13. The method of Claim 12, wherein:

- a) said contacting results in modulation of STAT activation;
- b) said labeling allows purification of IL-7R α or R δ 2 subunit expressing cells; or
- c) said labeling allows depletion of IL-7R α or R δ 2 subunit expressing cells.

14. A population of cells made by the method of Claim 13.

15. The population of Claim 14, which are prepared by Fluorescent Activated Cell Sorting.

16. A method of testing a compound for ability to affect receptor-ligand interaction, said method comprising comparing the interaction of a receptor complex comprising IL-7R α and/or R δ 2 subunit with IL-B50 in the presence and absence of said compound.

17. The method of Claim 16, wherein said compound is an antibody which binds one of:

- a) IL-7R α ;
- b) R δ 2 subunit;
- c) a receptor comprising IL-7R and/or R δ 2; or
- d) IL-B50.

18. An isolated or recombinant protein complex comprising:

- a) at least 15 contiguous amino acid residues of SEQ ID NO: 2 and at least 15 contiguous amino acid residues of SEQ ID NO: 4;
- b) at least two distinct segments of at least 8 contiguous amino acid residues of SEQ ID NO: 2 and at least two distinct segments of at least 8 contiguous amino acid residues of SEQ ID NO: 4; or
- c) at least one segment at least 21 contiguous nucleotides of SEQ ID NO: 1 and at least one segment at least 21 contiguous nucleotides of SEQ ID NO: 3.

19. The complex of Claim 18, wherein

- a) one of said segments of SEQ ID NO: 2 is from the extracellular portion of said sequence;
- b) one of said segments of SEQ ID NO: 4 is from the extracellular portion of said sequence; or
- c) said polypeptide comprises the mature SEQ ID NO: 2 and the mature SEQ ID NO: 4 sequences.

20. An isolated or recombinant polynucleotide encoding said complex of Claim 19, wherein:

- a) said polynucleotide comprises a deoxyribonucleotide;
- b) said polynucleotide comprises a ribonucleotide; or
- c) at least one of said segments is operably linked to a promoter

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